HYBRID SOCIAL NETWORK FEED GENERATION ALGORITHM

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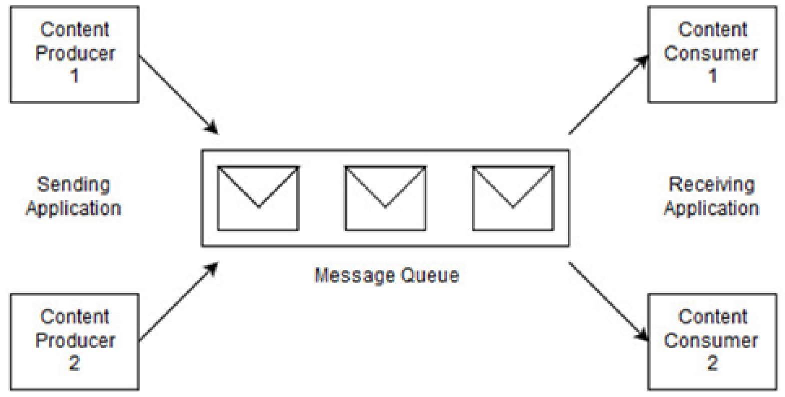
PROBLEM

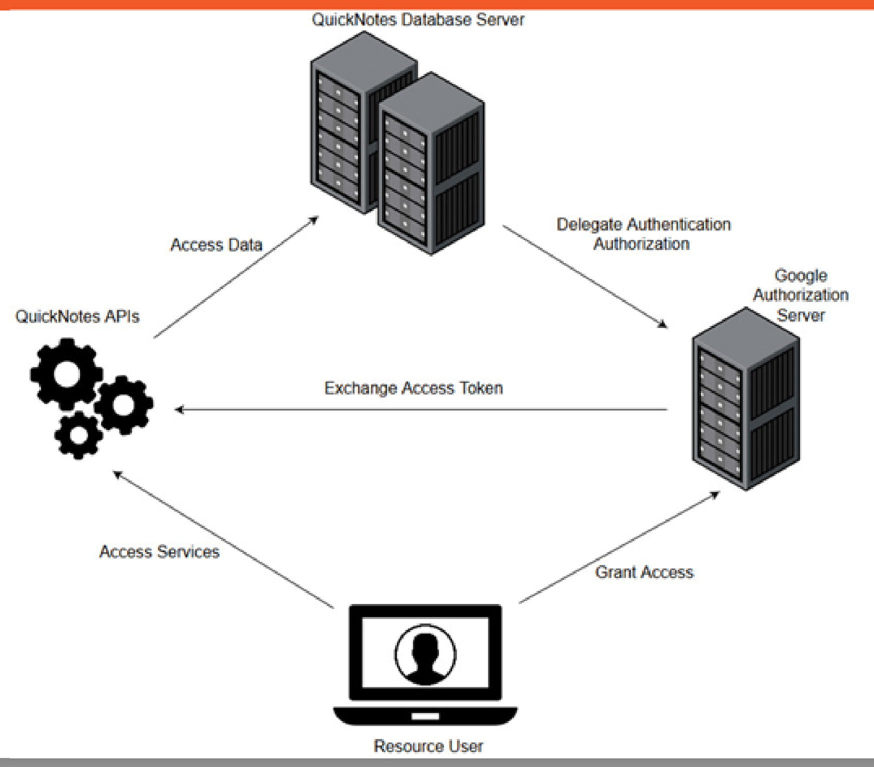
Feed generation in a social network can be accomplished using one of two models; either a push model or a pull model [1]. Modern social networking sites work with a hybrid approach but the architecture gets complex. In this project we implement a simple hybrid architecture and show its working on an educational social networking platform called QuickNotes

MESSAGE QUEUES



Message queues provide communication and coordination for these distributed applications [4]. In feed generation, each item in the activity streams generated by users needs to be processed. This can be done by pushing items to a message queue while another component performs actions on these such as ranking and pushing them to other users.

OVERVIEW OF THE QUICKNOTES PLATFORM


QuickNotes Database Server
Access Data
Delegate Authentication Authorization
Google Authorization Server
QuickNotes APIs
Exchange Access Token
Access Services
Grant Access
Resource User

Project Carried out at Sir. MVIT by students of the Department of Computer Science and Engineering

ACTIVITY STREAM

An activity stream is a list of recent activities performed by an individual, typically on a single website [2]. For example, Facebook's News Feed is an activity stream. Activities in a stream include publishing a post, commenting on a post and 'liking'.

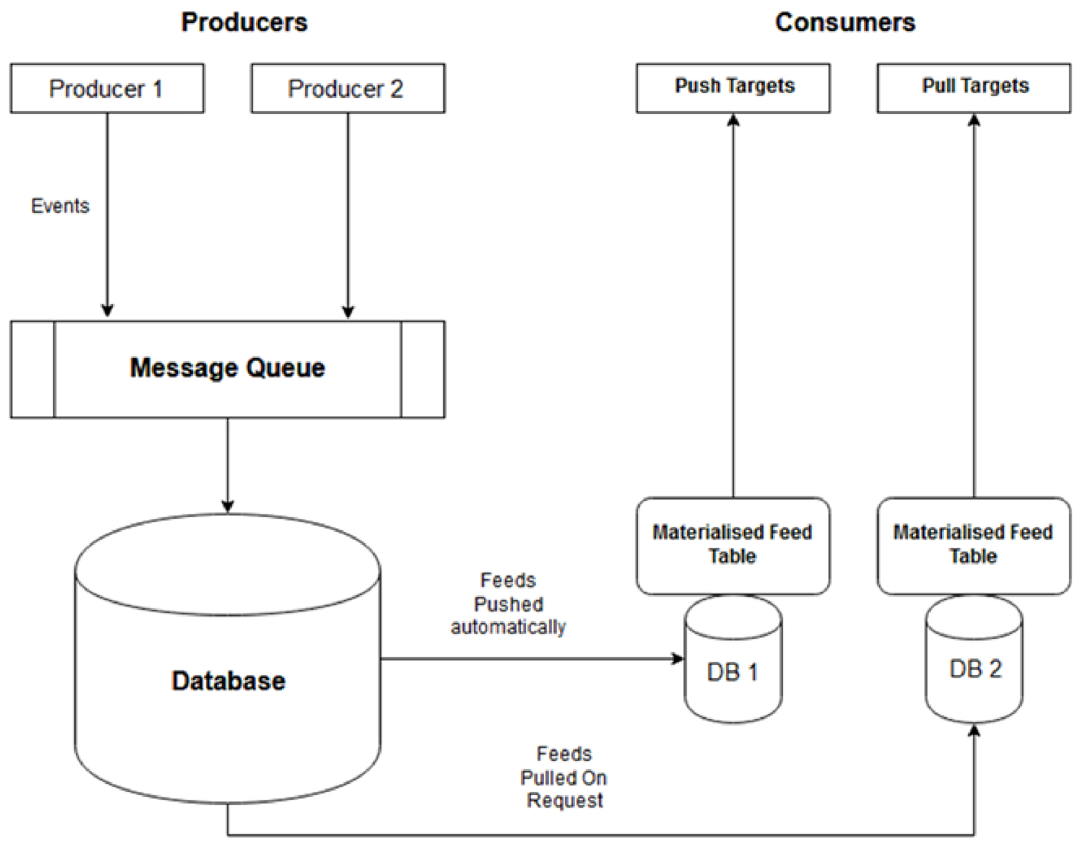
EXISTING MODELS

There are primarily 2 models to generate user feed events[3] :

1.Push Model - Each activity is pushed to a generated feed maintained for every consumer.

2.Pull Model - Activities are retrieved from producers when user logs in.

OUR MODEL



Individual users are classified as either push-target or pull-target based on the frequency of querying for feed. If a user queries for updates frequently, the user is classified as a push-target. If a user queries relatively less, the user is a pull-target. The threshold frequency to decide whether a user is push or pull target can be decided based on the average query frequency of all users and current system performance.

HYBRID FEED GENERATION ALGORITHM

Algorithm Hybrid algorithm for feed generation

Input: *e (Event), User*

Output: *User Feed*

```
on Event(e, User):
    for each PUSH follower of User
        follower.feed.push(e)

fetchFeed(User):
    if User is PUSH:
        return User.Feed
    else if User is PULL
        User.Feed = []
        for each following of User:
            User.Feed.append(following.activity.top)
    return User.Feed
```

REFERENCES

[1]. https://www.quora.com/What-are-the-best-practices-for-building-something-like-a-news-feed

[2]. https://en.wikipedia.org/wiki/Activity_stream

[3]. A. Silberstein et al. "Feeding Frenzy: Selectively Materializing Users'Event Feeds" SIGMOD, June 6–11, 2010.

[4]. https://aws.amazon.com/message-queue/